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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,001

07/25/2005

Mikio Yamahiro

2005-0455A

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EXAMINER

MATOCHIK, THOMAS L

ART UNIT

PAPER NUMBER

1709

MAIL DATE

DELIVERY MODE

09/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/528,001

Applicant(s)

YAMAHIRO ET AL.

Examiner

Thomas Matochik

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1709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 21-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/16/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I, claims 1-20, in the reply filed on 8/24/2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 21-49 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Lichtenhan (US 2003/0055193) as evidenced by Matyjaszewski et.al (US 6,162,882).
Regarding claims 1 and 2: Lichtenhan teaches a polysilsesquioxane structure having Si bonded R groups that can be hydrogen atoms, cyclic or linear aliphatic or aromatic groups which contain a variety of reactive functionalities (¶ 0010). In addition, the polysilsesquioxane has the structure shown (¶ 0035, scheme 2) whereby the RY groups are defined as being aliphatic and aromatic halides, esters and mercapto compounds (¶ 0040). Lichtenhan does not teach these functionalities to be "living radical

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polymerization initiators" but evidence from Matyjaszewski teaches that substituted and unsubstituted aromatic halides, thioesters, carboxylate esters are living radical polymerization initiators (col. 9, lines 48-67 and col. 10, lines 1-55).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lichtenhan as applied to claims 1 and 2 above, and further in view of Matyjaszewski et.al (US 6,162,882).

Regarding claim 3 -14: Lichtenhan does not teach the specific living radical

polymerization initiating group (A) cited in the instant. However, Matyjaszewski teaches the living radical polymerization initiating group (formula 2-1) cited in the instant (col. 10, line 48-benzyl halide). Lichtenhan and Matyjaszewski are analogous art since they are from the same field of endeavor, namely catalytic supports and materials. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to employ a benzyl halide, as taught by Matyjaszewski, into Lichtenhan, to reduce the cost of goods in manufacturing. Lichtenhan teaches the R groups on the polyalkylsilsequioxane can be hydrogen, alkyl, alkenyl (¶ 0010, lines 3-9), phenyl (¶ 0082, line 1). Lichtenhan also teaches the R groups on the polyalkylsilsequioxane

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can be all the same, a homoleptic system or different, a heteroleptic system (§ 0010, lines 8 and 9). Matyjaszewski teaches that chlorine or bromine are the preferred halogens (col. 10, lines 53-55). Lichtenhan teaches R phenyl groups (§ 0082, line 1). A benzyl group would be an alkylphenyl and would not substantially change the properties of the structure in Lichtenhan.

Regarding claim 15-17: Lichtenhan does not teach the specific living radical polymerization initiating group A (formula 2-2) cited in the instant. However, Matyjaszewski teaches the living radical polymerization initiating group (formula 2-2) cited in the instant (col. 9, lines 50-67 and col. 10, lines 1-20). Lichtenhan and Matyjaszewski are analogous art since they are from the same field of endeavor, namely catalytic supports and materials. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to employ a specific aromatic amine substituted thioester as taught by Matyjaszewski, into Lichtenhan, to provide a material having a narrow polydispersity index. Lichtenhan teaches the R₁ groups on the polyalkylsilsequioxane can be hydrogen, alkyl (§ 0010, lines 3-9) and phenyl (§ 0082, line 1). Lichtenhan also teaches the R₂ groups on the polyalkylsilsequioxane can be all the same, a homoleptic system (§ 0010, lines 8 and 9).

Regarding claim 18-20: Lichtenhan does not teach the specific living radical polymerization initiating group A (formula 2-3) cited in the instant. However, Matyjaszewski teaches the living radical polymerization initiating group (formula 2-3) cited in the instant (col. 10, lines 36-37). Branched group R⁸ is not specifically taught but would fall into the category of C1-C6 alkyl groups. Lichtenhan and Matyjaszewski

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are analogous art since they are from the same field of endeavor, namely catalytic supports and materials. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to employ a specific chlorinated carboxylate ester, as taught by Matyjaszewski, into Lichtenhan, to provide a material having a narrow polydispersity index. Lichtenhan teaches the R groups on the polyalkylsilsesequioxane can be hydrogen, alkyl (§ 0010, lines 3-9), phenyl (§ 0082, line 1). Lichtenhan also teaches the R¹ groups on the polyalkylsilsesequioxane can be all the same, a homoleptic system or different, a heteroleptic system (§ 0010, lines 8 and 9). Matyjaszewski teaches that chlorine or bromine are the preferred halogens (col. 10, lines 53-55). Lichtenhan and Matyjaszewski are analogous art since they are from the same field of endeavor, namely catalytic supports and materials. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to employ a specific chlorinated carboxylate ester to provide a material having a narrow polydispersity index.

Correspondence


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Matochik whose telephone number is 571-270-3291. The examiner can normally be reached on Monday-Friday 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TLM
09/11/2007



MARK EASHOO, PH.D.
SUPERVISORY PATENT EXAMINER

17/Sep/07